(No Model.)

J. THOMAS.

APPARATUS FOR EMPTYING WATER PIPES.

No. 245,239. Patented Aug. 2, 1881.

fig. 1.

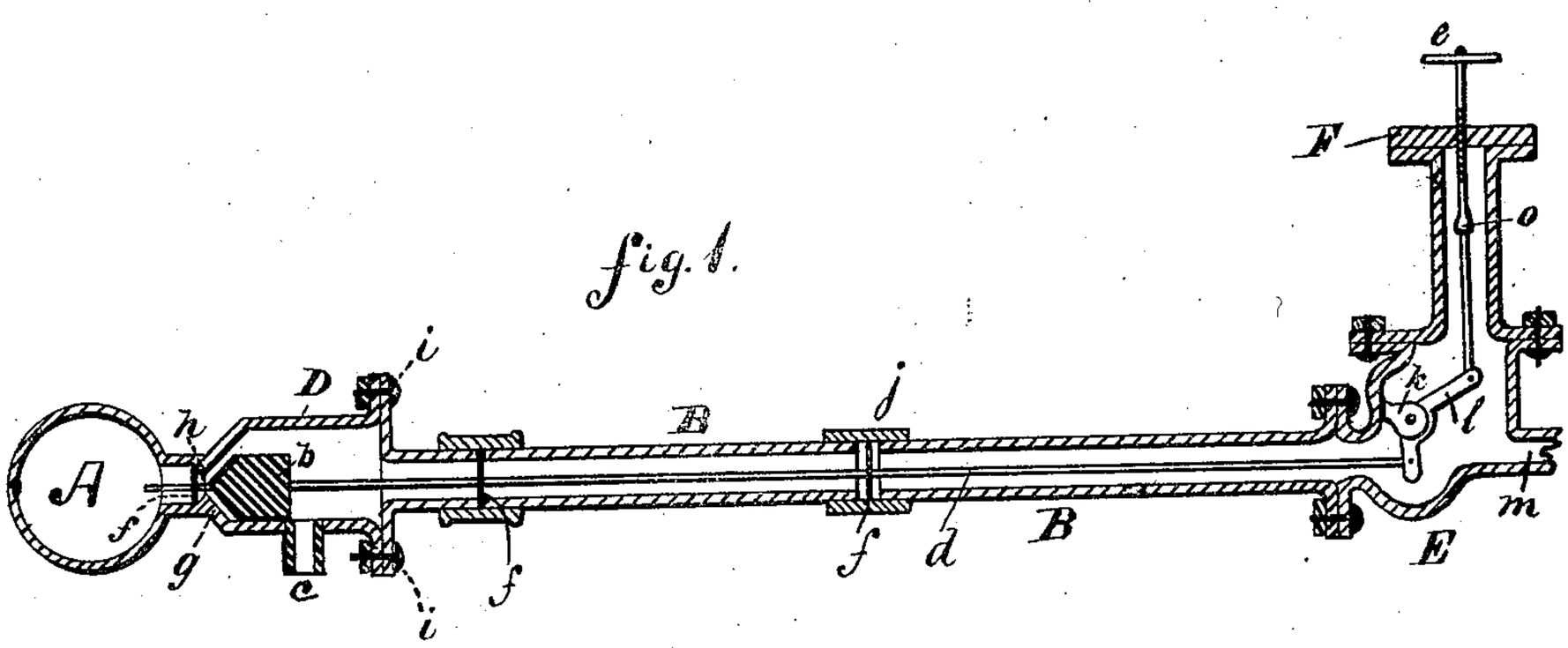


fig. 2.

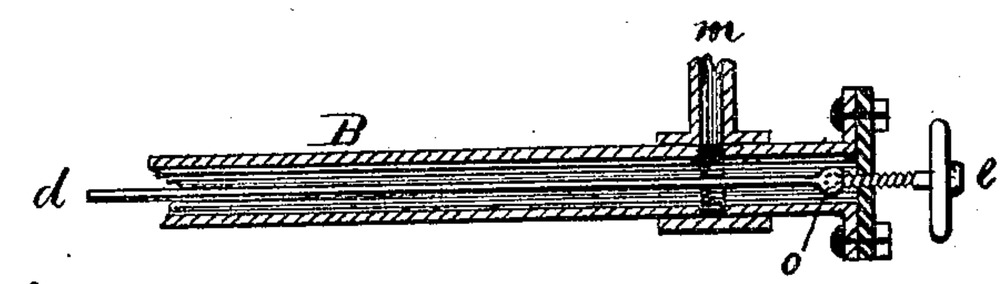
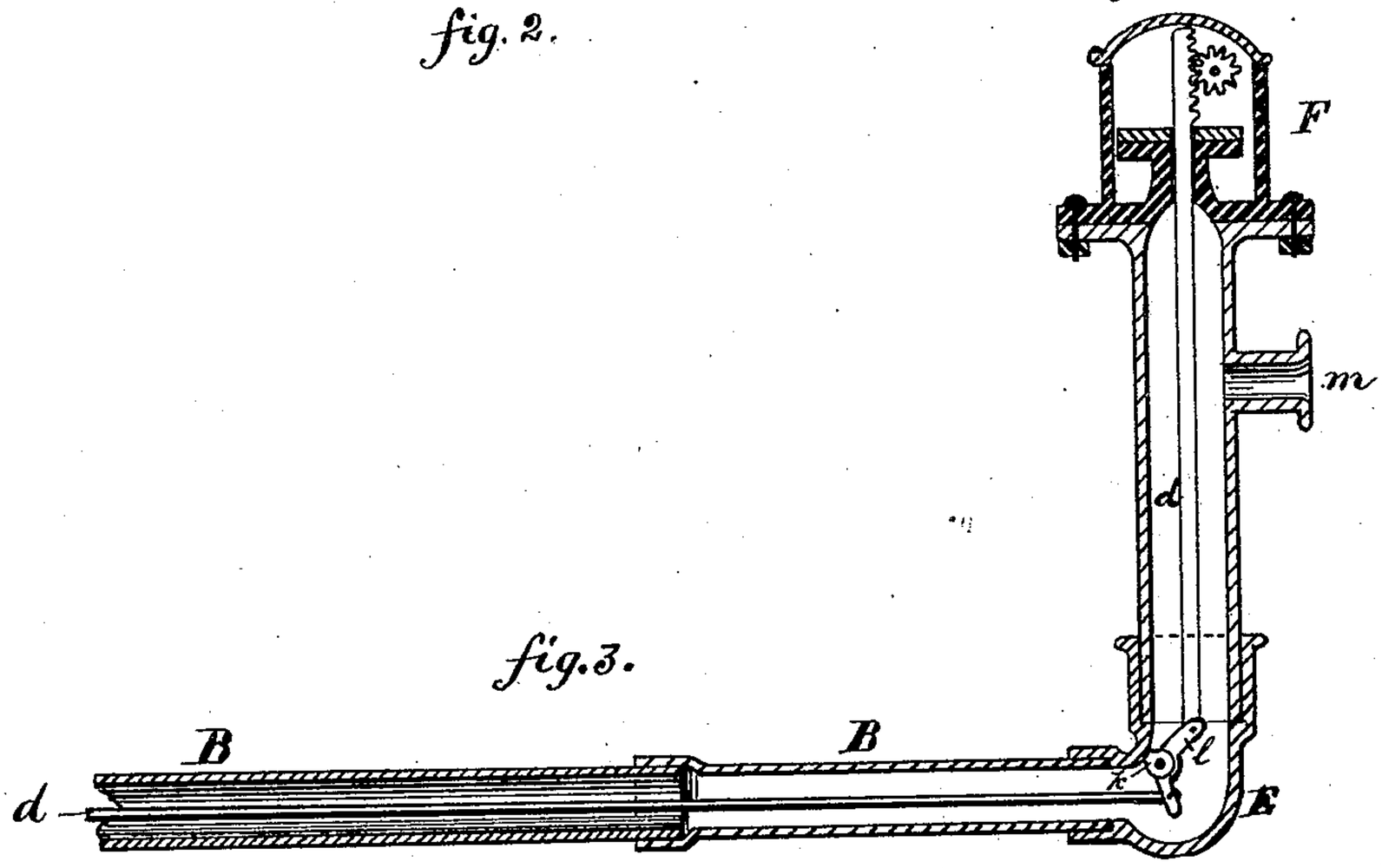


fig. 3.



Attest:
Charles A. Pell
Chas. Marin

fig. 4.

Inventor:
James Thomas,
by O Drake. Atty.

UNITED STATES PATENT OFFICE.

JAMES THOMAS, OF NEWARK, NEW JERSEY.

APPARATUS FOR EMPTYING WATER-PIPES.

SPECIFICATION forming part of Letters Patent No. 245,239, dated August 2, 1881.

Application filed March 17, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES THOMAS, of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Emptying Water-Pipes and to Prevent the same from Freezing and Bursting; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The primary object of this invention is to prevent water from freezing in and bursting water-supply pipes, by which great inconvenience is occasioned, as well as expense in repairing; and it consists in the construction and arrangement of parts hereinafter fully set forth, and embodied in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is a sectional view of a device embodying my improvements adapted to be operated from a cellar; Fig. 2, a modification of the same; Fig. 3, a sectional view as applied to a fire-plug, and Fig. 4 a detail view of one of the parts.

In carrying out my invention, I construct a valve at or in close proximity to the point where the main and supply pipes connect, and adapted to shut off the supply of water thereto. Said valve is, or may be, formed in the manner shown, *b* being the valve proper, *d* the valve-rod, *g* the valve-seat, with which the said valve *b* engages to close the entrance-port *h*. Said valve is adapted to be manipulated from the surface of the ground or from the cellar of a house by the valve-rod *d*, which passes back from the said valve through the supply-pipe to the desired point of manipulation, in a manner or manners hereinafter set forth.

The bottom of the valve-chest D, which incloses the valve *b*, is perforated by an exit aperture or drip, *c*. Said drip is so situated within said chest D as that when the entrance-port *h* is opened the valve *b* slides over the drip *c*, closing the same; but when said port is closed the drip is opened, allowing free egress of the water from the supply and other pipes leading into and through the house, all of which will be understood from reference to Fig. 1. The water from the drip *c* passes into the ground, proper provision being made when the pipes are laid to allow the water such passage.

The pipes B may be cast or otherwise formed of galvanized iron, which before could not be used for supply-pipes in ordinary house-plumbing, the same being liable to burst when touched by frost. By the use of said pipes the cost of bringing the water from the main is materially reduced. However, I do not wish to limit myself to said iron pipes, as lead or other pipes will be equally operative, though not so well adapted to the purpose.

When temperature of the atmosphere is such as to endanger the pipes, the water should be drawn off by closing the entrance-port *h*, substantially in the manner made plain by Fig. 1. The water soon passes from the pipes into the ground through the drip *c*. Said supply-pipes may be laid in an inclined position in the ground, to facilitate the emptying of the same.

At convenient or appropriate distances through the supply-pipe are secured supports *f*, a face view of one of which is given in Fig. 4. Said supports *f* are so constructed as to form bearings for the before-mentioned valve-rod *d*. Said supports may be placed at points before and back of the valve *b*, to control the action of said valve upon the port *h* and drip-aperture *c*. They may be separately formed and simply laid in the joint, the ends of the pipes and couplings holding them rigidly in position.

When it becomes necessary to turn an angle in the pipes, as in Figs. 1 and 3, an elbow, E, may be adjusted therewith. Said elbow E has a pivoting-arm, *k*, which carries an angle-crank, *l*, to which the rods *d* are connected, all as will be readily understood upon reference to Figs. 1 and 3.

The valve at the main pipe A may be manipulated from the surface of the ground or from the cellar of the house, as follows: Upon the end of the supply-pipe is secured a head, F, through which rod *d* passes. Said rod and head are or may be provided with male and female screw-threads, as indicated in Figs. 1 and 2. The end of the rod may be provided with means *e* adapted to turn the rod, and a ball-and-socket joint or other appropriate joint

may be formed at a convenient point, as at *o*, to allow said turning.

The letter *m* in Figs. 1 and 2 indicates exits for the water to the house, or, as in Fig. 3, for extinguishing fires, &c.

By means of this improvement not only is the water prevented from freezing in and bursting the water-pipes, but other secondary advantages are gained—such, for instance, as when the device is applied to fire-plugs it will not be necessary periodically to change the water lying in said plug to clear the same from rust and accumulated dirt, as is now the case, by which process a great quantity of water is wasted, the surface of the street impaired, and time lost in attending to said process. Again, it will not be necessary to dig as deep in laying the pipes as at present, thus saving labor and consequent cost.

The operation of the device is simple and has been already to a great extent explained.

When it is thought by the resident of the house that there is danger of freezing, the end of the rod is manipulated from the cellar or other convenient point, by which the valve *b* is closed. The water then gradually passes off into the ground through the drip *c*. The action is reversed when the water is let into the pipes, as will be obvious.

It is necessary to have the rod *d* so combined and arranged with the head F as that the force of the water in the main A will not open communication with the supply-pipe B, as will be understood.

I am aware that corner-cranks in connection with rods in water apparatus are old, and that it is not new to form cut-off valves and drips at or near the main pipe within supply-pipes. I do not wish to be understood as claiming these features, broadly; but

Having thus described my invention, what I claim, and wish to secure by Letters Patent, is—

1. The combination, with water-supply pipes leading from a street-main to an exit at a distance from said main, (as, for example, an exit in a house or fire-plug,) of a cut-off valve and drip situated within said supply-pipe at or in close proximity to the point where the main and supply pipes connect; of rods passing through the pipe and operating said valve and causing the same to engage alternately with an entrance-port and said drip; supports placed at intervals within the joints of said pipes; an elbow having a pivoting arm formed therein; an angle-crank, to which said rods working within said pipes are connected, and means connected with said rods adapted to cause the same to open and close the valve at the street-main, all the parts being arranged and operated substantially as and for the purposes set forth and shown.

2. In combination, in a device for cutting off water from a supply-pipe at a street-main, to prevent said supply-pipe from bursting, a sliding valve engaging with an entrance-port and drip at or in close proximity to said street-main, and means connected therewith adapted to allow said sliding valve to be manipulated from the house, fire-plug, or other place of exit distant from said water-main, substantially as and for the purposes set forth and shown.

3. In combination in a device for cutting off water from a supply-pipe at a street-main to prevent said supply-pipe from bursting, a sliding valve engaging with an entrance-port and drip, a rod or rods connected with said valve, and a corner-crank, substantially as and for the purposes set forth and shown.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of February, 1881.

JAMES THOMAS.

Witnesses:

JAMES M. TRIMBLE,

JOSEPH L. HAWES.